

**Math 211 Statistics****Credit Hours:** 3**Scheduled hours per week**

Lecture: 3

Lab: 0

Other: 0

**Catalog Course Description:** Descriptive and inferential statistics, descriptive measures, probability, random variables, discrete and continuous probability distributions, expected value, Central Limit Theorem, confidence intervals, tests of hypothesis, chisquare test, regression and correlation.

**Pre-requisites:** None**Co-requisites:** None**Course Learning Outcomes:**

- A. Students will interpret and apply basic concepts of descriptive statistics
- B. Students will apply probability concepts including Addition Rule, Multiplication Rule and Counting Techniques
- C. Students will calculate the mean and standard deviation for discrete Random Variables, including Binomial Distribution
- D. Students will solve application problems dealing with Normally Distributive data
- E. Students will apply the Central Limit Theorem
- F. Students will calculate Confidence Intervals used to estimate population means
- G. Students will apply basic concepts of inferential statistics

**Topics to be studied:**

Descriptive statistics including:

measures of center,  
measures of variation,  
histograms, boxplots

Probability concepts including:

Addition Rule,  
Multiplication Rule and  
Counting Techniques  
Random Variables  
Binomial Probability Distributions  
Standard Normal Distributions and their Applications  
Central Limit Theorem  
Confidence Intervals  
Hypothesis Testing  
Regression and Correlation (optional)

**Relationship of Course to Program or Discipline Learning Outcomes:**

(What program outcomes are being met by this course?)

For general education courses, a listing of the general education competencies that are met.)

<b>Relationship of Course to Mathematics (MATH) Student Learning Outcomes:</b>	
<b>Demonstrate understanding</b> of the language of mathematics, by their use of symbols, definitions, word phrases, and representations.	X
<b>Display proficiency</b> in mathematical computations.	X
<b>Implement mathematical techniques</b> to solve applied problems.	X
<b>Employ appropriate technology</b> to demonstrate knowledge of mathematical concepts.	X
<b>Exhibit mastery</b> of core course competencies.	X
<b>10/20/2017</b>	

<b>Relationship of Course to General Education Learning Outcomes:</b>	
<b>Composition and Rhetoric</b> Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
<b>Science &amp; Technology</b> Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	
<b>Mathematics &amp; Quantitative Skills</b> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
<b>Society, Diversity, &amp; Connections</b> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
<b>Human Inquiry &amp; the Past</b> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
<b>The Arts &amp; Creativity</b> Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
<b>10/20/2017</b>	

**Special requirements of the course:** Weekly Lab assignments which apply the concepts learned in lecture.

**Additional information:** None

**Prepared by:** Thomas Riddle

**Date:** 10/20/2017